

AMENDMENTS

This listing of claims will replace all prior versions and listings of claims in the prior application:

Claims 1-45 (Canceled)

Claim ¹~~46~~ (new) A method for individually labeling a cell within a population of cells whereby the cell is differentially labeled relative to neighboring cells within the population, the method comprising propelling a particle coated with a lipophilic hydrophobic dye at the population of cells to cause the particle to contact the membrane of the cell, and allowing the dye to diffuse into the cell membrane and thereby differentially label the cell relative to neighboring cells within the population.

Claim ²~~47~~ (new) The method of claim ¹~~46~~, wherein the lipophilic hydrophobic dye is a fluorescent dye.

Claim ³~~48~~ (new) The method of claim ¹~~46~~, wherein the fluorescent dye is a carbocyanine dye.

Claim ⁴~~49~~ (new) The method of claim ³~~48~~, wherein the dye is selected from the group consisting of DiO, DiI, DiD, and any combination thereof.

Claim ⁵~~50~~ (new) The method of claim ¹~~46~~, wherein the propelling is by a gas means.

Claim ⁶~~51~~ (new) The method of claim ⁵~~50~~, wherein the gas means is a particle gun.

Claim ⁷~~52~~ (new) The method of claim ¹~~46~~, wherein the particle is a metal particle.

Claim ⁸~~53~~ (new) The method of claim ⁷~~52~~, wherein the metal particle is selected from the group consisting of ferrite crystals, gold and tungsten.

Claim ⁹~~54~~ (new) The method of claim ¹~~46~~, wherein the population of cells is part of a tissue.

Claim ¹⁰~~55~~ (new) The method of claim ⁹~~54~~, wherein the tissue is selected from the group consisting of tumor tissue, epidermal tissue, muscle tissue, bone marrow tissue, neural tissue, brain tissue, organ tissue, and human biopsy tissue.

Claim ¹³~~56~~ (new) The method of claim ¹~~46~~ wherein the stained cell is a living or a fixed cell.

Claim ¹⁴~~57~~ (new) The method of claim ¹³~~56~~, wherein the stained cell is a living cell and said cell is imaged within about one minute of the coated particle being propelled at the cell.

Claim ¹⁵~~58~~ (new) The method of claim ¹³~~56~~, wherein the stained cell is a fixed cell and said cell is imaged within less than about five minutes to about thirty minutes of the coated particle being propelled at the cell.

Claim ¹¹~~59~~ (new) The method of claim ⁹~~54~~, wherein the coated particle is propelled 50-100 μ m into the tissue to contact the membrane of the cell.

Claim ¹²~~60~~ (new) The method of claim ¹¹~~59~~, wherein the coated particle is propelled about 50-70 μ m into the tissue.

Claim ¹⁷~~61~~ (new) The method of claim ¹~~46~~, wherein the cell is a neuron.

Claim ¹⁸~~62~~ (new) The method of claim ¹⁷~~61~~, wherein the particle contacts an axon.

Claim ¹⁹~~63~~ (new) The method of claim ¹⁷~~61~~, wherein the particle does not contact the cell body.

Claim ²⁰~~64~~ (new) A method for individually labeling cells within a population of cells whereby the cells are differentially labeled relative to neighboring cells within the population, the method comprising propelling a plurality of particles coated with a lipophilic hydrophobic dye at the population of cells to cause the particles to contact the membranes of the cells, and allowing the dye to diffuse into the cell membranes and thereby differentially label the cells relative to neighboring cells within the population.

Claim ²¹~~65~~ (new) The method of claim ²⁰~~64~~, wherein the particles are coated with more than one lipophilic hydrophobic dye.

Claim ²³~~66~~ (new) The method of claim ²¹~~65~~, wherein each lipophilic hydrophobic dye has an emission profile that is distinct from each of the other lipophilic hydrophobic dyes.

Claim ²²~~67~~ (new) The method of claim ²⁰~~64~~, wherein the dye is a fluorescent dye.

Claim ²⁴~~68~~ (new) The method of claim ²⁰~~64~~, wherein the fluorescent dye is a carbocyanine dye.

Claim ²⁵~~69~~ (new) The method of claim ²⁴~~68~~, wherein the carbocyanine dye is selected from the group consisting of DiO, DiI, DiD, and any combination thereof.

Claim ²⁶~~70~~ (new) The method of claim ²⁰~~64~~, wherein the plurality of particles is contained in at least one macroprojectile.

Claim ²⁷~~71~~ (new) The method of claim ²⁰~~64~~, further comprising causing the macroprojectile to contact a macroprojectile stopping means before contacting the cells, the macroprojectile stopping means being capable of stopping the macroprojectile while allowing at least one particle to continue toward the target cell.

Claim ²⁸~~72~~ (new) The method of claim ²⁷~~71~~, wherein the macroprojectile stopping means is a filter.

Claim ²⁹~~73~~ (new) The method of claim ²⁸~~72~~, wherein the filter has a pore size of between about 1 and about 8 μm .

Claim ³⁰~~74~~ (new) The method of claim ²⁰~~64~~, wherein the propelling is by a gas means.

Claim ³¹~~75~~ (new) The method of claim ³⁰~~74~~, wherein the gas means is a particle gun.

Claim ³²~~76~~ (new) The method of claim ²⁰~~64~~, wherein the particles are metal particles.

Claim ³³~~77~~ (new) The method of claim ³²~~76~~, wherein the metal particles are selected from the group consisting of ferrite crystals, gold and tungsten.

Claim ³⁴~~78~~ (new) The method of claim ²⁰~~64~~, wherein the population of cells is part of a tissue.

Claim ³⁵~~79~~ (new) The method of claim ³⁴~~78~~, wherein the tissue is selected from the group consisting of tumor tissue, epidermal tissue, muscle tissue, bone marrow tissue, neural tissue, brain tissue, organ tissue, and human biopsy tissue.

Claim ³⁸~~80~~ (new) The method of claim ²⁰~~64~~ wherein the stained cells are living or fixed cells.

Claim ³⁹~~81~~ (new) The method of claim ³⁸~~80~~, wherein the stained cells are living cells and said cells are imaged within about one minute of the coated particles being propelled at the cells.

Claim ⁴⁰~~82~~ (new) The method of claim ³⁸~~80~~, wherein the stained cells are fixed cells and said cells are imaged within less than

about five minutes to about thirty minutes of the coated particles being propelled at the cells.

Claim ³⁶~~83~~ (new) The method of claim ³⁴~~78~~, wherein the coated particles are propelled 50-100 μ m into the tissue to contact the membranes of the cells.

Claim ³⁷~~84~~ (new) The method of claim ³⁶~~83~~, wherein the coated particles are propelled about 50-70 μ m into the tissue.

Claim ⁴²~~85~~ (new) The method of claim ²⁰~~64~~, wherein the cell is a neuron.

Claim ⁴³~~86~~ (new) The method of claim ⁴²~~85~~, wherein the particle contacts an axon.

Claim ⁴⁴~~87~~ (new) The method of claim ⁴²~~85~~, wherein the particle does not contact the cell body.

Claim ⁴⁵~~88~~ (new) A method for individually labeling cells within a population of cells whereby the cells are differentially labeled relative to neighboring cells within the population, the method comprising propelling a plurality of particles containing a plurality of nucleotide sequences encoding fluorescent proteins having different emission spectra at the population of cells to cause the particles to enter the cells, and allowing expression of the proteins encoded by the nucleotide sequences to occur and thereby differentially label the cells relative to neighboring cells within the population.

Claim ⁴⁶~~88~~ (new) The method of claim ⁴⁵~~88~~, wherein the fluorescent proteins with different emission spectra are red fluorescent protein, green fluorescent protein or variants of green fluorescent protein.

Claim ⁴⁷~~90~~ (new) The method of claim ⁴⁵~~88~~, wherein the propelling is by a gas means.

Claim ⁴⁸~~91~~ (new) The method of claim ⁴⁷~~90~~, wherein the gas means is a particle gun.

Claim ⁴⁹~~92~~ (new) The method of claim ⁴⁵~~88~~, wherein the particles are metal particle.

Claim ⁵⁰~~93~~ (new) The method of claim ⁴⁹~~92~~, wherein the metal particles are selected from the group consisting of ferrite crystals, gold and tungsten.

Claim ⁵¹~~94~~ (new) The method of claim ⁴⁵~~88~~, wherein the population of cells is part of a tissue.

Claim ⁵²~~95~~ (new) The method of claim ⁵¹~~94~~, wherein the tissue is selected from the group consisting of tumor tissue, epidermal tissue, muscle tissue, bone marrow tissue, neural tissue, brain tissue, organ tissue, and human biopsy tissue.

Claim ⁵³~~96~~ (new) The method of claim ⁵¹~~94~~, wherein the coated particles are propelled 50-100 μm into the tissue to enter the cells.

Claim ⁵⁴97 (new) The method of claim ⁵³96, wherein the coated particles are propelled about 50-70 μm into the tissue.